

1 RECORD OF ORAL HEARING
2
3 UNITED STATES PATENT AND TRADEMARK OFFICE
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6 BEFORE THE BOARD OF PATENT APPEALS
7 AND INTERFERENCES
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10 Ex parte YOICHI OKAMOTO
11 and YOSHIHIDE KOHNO
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14 Appeal 2007-1902
15 Application 09/398,006
16 Technology Center 1700
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19 Oral Hearing Held: July 11, 2007
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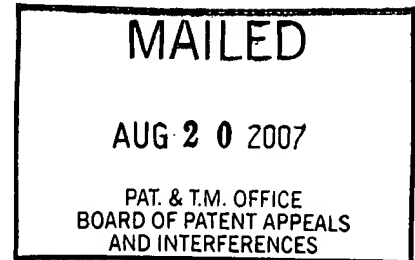
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23 Before CHUNG K. PAK, CHARLES F. WARREN,
24 and LINDA M. GAUDETTE,
25 Administrative Patent Judges
26

27 ON BEHALF OF THE APPELLANT:

28 JOHN M. BIRD, ESQUIRE
29 Sughrue, Mion, Zinn, Macpeak & Seas, PLLC
30 2100 Pennsylvania Avenue, N.W.
31 Washington, D.C. 20037
32 (202) 293-7060
33 (202) 293-7860 - fax
34

35 ALSO PRESENT:

36 JOE ARAND
37 YOICHI MATSUMOTO
38 ADAM SWAIN
39 BLAKE TANKURSLEY



1 The above-entitled matter came on for hearing on Wednesday,
2 July 11, 2007, commencing at 9:30 a.m., at the United States Patent and
3 Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Deborah
4 Rinaldo, RPR, Notary Public, CCR No. 0315067.

5 THE CLERK: Calendar number 14. Appeal Number 2007-
6 1902. The attorney is Mr. John Bird.

7 JUDGE PAK: Mr. John Bird, good morning. We have two
8 interns to the Board of Patent Appeals; Mr. Adam Swain and Joe Arand will
9 be observing this hearing. And we have a court reporter, Debbie Rinaldo,
10 who will be transcribing the hearing, and that transcript will become part of
11 the record.

12 And if you wish to introduce your colleagues who came in with
13 you, you may do so.

14 MR. BIRD: This is Yoichi Matsumoto of Bridgestone
15 Corporation, the assignee. This is Blake Tankursley of the Sughrue Mion
16 law firm with me. And may it please the board, I'm John Bird.

17 JUDGE PAK: Mr. Bird, you've got 20 minutes to argue your
18 case and you may start any time you are ready.

19 MR. BIRD: I would like to begin with figure 5 of our patent.
20 Generally in figure 5 our claims are directed to a radial tire, 30, that includes
21 a radial carcass, 33; and above that radial carcass there is a belt, 34, that
22 reinforces the tread, 31. The tread includes circumferential grooves, 40. I
23 will discuss the distinctions related to the layers, 35, 36 and 37 of the belt.

24 This is a "consisting of" claim wherein the belt consists -- is
25 consisting of three rubberized cord layers. So it has to have exactly those
26 three layers.

1 Regarding claim 1, referring to claim 1, claim 1 includes one
2 recitation about the cords of each of the innermost layer which is at 35 in
3 that figure, and the middle cord layer have an inclination angle of ten to 25
4 degrees with respect to the equatorial plane. So the inner in and middle
5 layer have a smaller angle.

6 Then the outermost angle has an inclination angle of 45 to 115
7 degrees with respect to the equatorial plane E, as measured in the same
8 direction as the cords of the middle cord, 36. So there is a larger angle in the
9 uppermost layer. The cords have a larger angle.

10 Claim 24 has a similar recitation except that in the uppermost
11 cord the angle is 45 to 90 degrees. And with respect to the innermost and
12 middle layers, these cords, because they have the smaller angle, provide an
13 increased tension, and that increased tension works to bear the
14 circumferential force from the inflation of the tire.

15 In contrast, the outermost layer that's on top of that has the
16 greater angle. It will stretch more easily. And because of this ability to
17 stretch and move more easily, it provides the cut resistance for the tire.

18 And the lower and middle layers, because they are close to the
19 circumferential plane with that small angle, will often tend to move towards
20 the circumferential plane or move towards an even smaller angle, and the
21 outer layer works with these to control this.

22 Also, referring now to independent claim 1, a different part of
23 it, and dependent claim 26, the actual configuration of the layers, including
24 the widths of each of these individual layers is an important and critical
25 aspect of the invention.

1 However, the examiner has looked at Farnsworth and has
2 attempted to piecemeal, combine the several embodiments of Farnsworth
3 together to achieve the tires of claims 1 and 26.

4 For example, looking at figure 1 of Farnsworth -- well, let me
5 go back to claim 1. Excuse me. The outermost cord has a -- is narrower
6 than a width of the innermost cord layer 35. So I guess figure 8 is the best
7 place to look for this feature.

8 The outermost cord is narrower than the width of the innermost
9 cord. And also, the outermost layer has a width corresponding to 1.0 to 1.2
10 times the width of the middle cord layer, 36.

11 So as you can see in figure 8, that means that the upper cord is
12 wider, the middle cord has a medium width and the lower cord is the widest
13 of the cords. However, the upper cord and the middle cord could be the
14 same width.

15 JUDGE WARREN: That's not the case in claim 24, is it?

16 MR. BIRD: No. This feature of the 1.0 to 1.2 times the width
17 of the middle layer is not included in claim 24.

18 JUDGE WARREN: But it's in claim 26.

19 MR. BIRD: It's in claim 26 -- dependent claim 26. Claim 25 is
20 very similar. It does not require the 1.0 to 1.2 times the width. Instead,
21 claim 25 only requires that the outermost cord layer is a width equal to or
22 wider than a width of the middle cord. So it doesn't have the range, but it
23 still has the same general relationship.

24 So the examiner looks to the first embodiment of Farnsworth.
25 In that one the outermost ply is narrower than both the middle ply and the

1 lowest cord. So it does not match with our embodiment or with our
2 claimed requirements for claims 1 and 26 and also 25.

3 And the examiner also looks to the embodiments of figures 3B
4 and 3C of Farnsworth. However, in those embodiments the outermost layer,
5 which has the higher cord angle, is always larger than both the middle layer
6 and the lower layer.

7 So the examiner, at first he tries to combine --

8 JUDGE WARREN: Well, I think if you look at the figures, it
9 seems to me if you look at the figures of Farnsworth 3A to C, that what
10 would correspond to your outermost layer sort of shifts around, but still the
11 relationship between the layers in terms of width varies, correct?

12 MR. BIRD: Yes. Well, if you look at figure 3B and figure 3C,
13 they are similar to the claimed relationship where the higher-angle cord
14 would be on the top uppermost layer. And L, which is the lower angle,
15 would be in the middle and lower layers. So that's similar to our relationship
16 regarding the angles.

17 JUDGE WARREN: But it still shows that regardless of the
18 angle of inclination, that the layers do move around. And it's sort of
19 interesting, too, that the layer with probably the smallest width is always
20 what would amount to your middle layer.

21 MR. BIRD: You mean the layer with the smallest width.

22 JUDGE WARREN: Well, if you look at Farnsworth figure 1,
23 H would be the outermost layer, L' would be the middle layer and L would
24 be the lower layer. So they sort of move around when you look at figures
25 3A to 3C.

1 MR. BIRD: Figure 1 has a similar relation -- and figure 3B and
2 3C have the same relationship to our claim with respect to the cord angle
3 relationship.

4 JUDGE WARREN: Well, I already analyzed it. The reference
5 does seem to show that you can have different widths and different levels.

6 MR. BIRD: The reference does show various embodiments.
7 However, our specific configuration has technical advantages and aspects.
8 The fact that our outermost cord has this width extending toward the end of
9 the tread portion and over the outermost groove edge, that provides a cut
10 resistance that the bottom of these circumferential grooves where objects
11 could sometimes become stuck.

12 JUDGE WARREN: You are talking about your belt 34 as a
13 whole or are you talking about one of the layers?

14 MR. BIRD: Just the outermost cord layer. Our claim requires
15 the outermost cord layer has a width extending toward an end of the tread
16 portion out of the outermost groove edge of the circumferential groove 40.

17 JUDGE WARREN: Okay.

18 MR. BIRD: I would like to speak about that in a few minutes,
19 that feature. But however, the fact that the outermost cord is narrower than
20 the width of the innermost cord, that would provide an advantage because
21 when you are manufacturing the tire, you put rubber on top of these cords to
22 form the tread.

23 And if the outermost cord is wider than that of the innermost
24 cord, an air bubble will form underneath the outermost cord. So when it
25 forms together, that air bubble would cause cracking.

1 However, if the outermost cord is narrower than the innermost
2 cord, then the rubber will go in on top of the innermost cord and be able to
3 eliminate the air bubble.

4 JUDGE WARREN: Could you point out in your brief where
5 that argument is made?

6 MR. BIRD: No, Your Honor. It's not in our brief, but the fact
7 of the width of the outermost cord 37 is as wide or wider than the width of
8 the middle cord, which is a claim limitation we hadn't discussed, it causes
9 part of the sheer rigidity between the cross cords be taken over between the
10 end portion of the outermost cord.

11 JUDGE WARREN: That's only with respect to claims 1 and
12 26.

13 MR. BIRD: 1 and 26. And also it would also affect claim 25
14 as well. And with respect to claim 26 and 1, exceeding the width of 1.2
15 could cause the tensile strain at the end of the outermost cord to become
16 large.

17 So our specific structural relationship between these cords is
18 very important to form a successful tire. And the examiner has looked at
19 one embodiment of Farnsworth and another embodiment of Farnsworth, and
20 neither one of these achieve our structure.

21 The examiner's reason for combining these is that Farnsworth
22 fails to expressly require that the outermost ply have an intermediate width,
23 and then he asserts that the reference has placed no criticality on which belt
24 is the widest or narrowest. So that is actually a deficiency in the reference
25 Farnsworth and not a reason for making this modification that the examiner
26 asserts.

1 We find that there is no reason at all and that the examiner is
2 just basing this on hindsight from taking into account our disclosure.

3 Recently the federal circuit had the KSR decision, and even
4 more recently the federal circuit, on the 28th, in Takeda Chemical Industries
5 versus Alphapharm, on the 28th of June -- that's 06-1329 at page 10 --
6 reiterated that there always has to be some identification for a reason that
7 one would have -- excuse me.

8 A reason that would have prompted a person of ordinary skill in
9 the relevant art to combine the elements in a way the claimed invention
10 does. So there is still a requirement that there is some reason.

11 JUDGE WARREN: Well, KSR took that away, did it?

12 MR. BIRD: No. This is a quote from page 27 Supreme Court
13 1721 of KSR as quoted by the federal circuit two weeks ago.

14 JUDGE WARREN: I understand that.

15 MR. BIRD: There must still be a reason. I believe that the
16 PTO's policy is still consistent that there must be some reason to combine
17 references or modify references. And so our position is that the examiner is
18 looking beyond what Farnsworth itself has.

19 And then in addition to Farnsworth, the examiner also says with
20 respect to Farnsworth that Farnsworth discloses that there is a staggering or
21 slightly staggered cords.

22 However, Farnsworth doesn't go into detail about the exact way
23 that this staggering would occur. Staggering of the belts, of course, is
24 known, but our specific pattern is what we are claiming here and the specific
25 arrangement of the layers with the specific cord angles.

1 The examiner also looks to Gaudin to show more about the
2 staggering of belts. However, Gaudin always discloses embodiments in
3 which the middle ply 2 is the ply at the greater angle. So you'll have the two
4 plies with cords at a small angle. And the middle ply 2 is always a ply that
5 is at the larger angle.

6 And as I mentioned before, in our embodiment -- or excuse me,
7 in our claims, we have the outermost layer 37 at the large angle, which will
8 provide the cut resistance because of its increased flexibility. And the two
9 inner and middle layers together will provide the tension and strength from
10 the inside of the tire. So in Gaudin these two smaller angled cord layers are
11 separated.

12 So the examiner further asserted that Gaudin discloses each of
13 six possible configurations. However, there are many other possible
14 configurations that could happen. Gaudin only refers to the six
15 configurations in which the middle ply has this greater angle cords -- cords
16 at a greater angle.

17 JUDGE WARREN: I guess if you look at it physically, if you
18 just consider the widths, that's about what you have, isn't it, six options?

19 MR. BIRD: You would have six options if you were to look --
20 I don't wish to answer that question.

21 But I would like to just -- Farnsworth -- excuse me, Gaudin is
22 very clear about the fact that there is a requirement to have a -- the middle
23 layer in this relationship and that the middle layer must be the layer with the
24 -- cords at the greater angle and the upper and lower have the smaller angle.

25 In addition, Gaudin discloses that figure 1, including a four-ply
26 breaker assembly including these upper plies 3 and 4. So Gaudin, at 3,

1 column 9 through 14, discloses figure 2 shows only the plies 1 through 3 of
2 the four-breaker ply.

3 So referring to figure 2 of Gaudin, it is said to show only plies 1
4 through 3 of the four-breaker ply. And then referring to figures 3 through 5
5 and 611, they show alternative arrangements there called alternative
6 arrangements of ply cord directions and breaker ply widths.

7 They do not explicitly say that this is a three-breaker ply.
8 Instead they just say these are alternate arrangements of that from figure 1.

9 JUDGE WARREN: But that's all the arrangements you could
10 possibly have if you are looking at the relative widths of the three-breaker
11 belt.

12 MR. BIRD: Well, the four-breaker belt --

13 JUDGE WARREN: I'm sorry. The three-belt breaker, however
14 you want to talk to it. If you are looking at the three belts, that's all the
15 possible configurations that you have if you just look at them structurally,
16 right?

17 MR. BIRD: I would like to just emphasize that it's not clear
18 from Gaudin that this is a three-breaker ply and that we have a very specific
19 structure with critical elements with respect to the way that it is arranged.
20 And to just piecemeal, take things from Gaudin and from Farnsworth
21 together is improper based on the standards set forth by the federal circuit
22 Supreme Court.

23 JUDGE PAK: Counsel, assuming that we determine that the
24 examiner did establish a prima facie case because changing this arrangement
25 is no more than a resource effective variable consistent with In Re Boesch,

1 did you rely on any factual evidence to demonstrate that unexpected
2 property of your claimed tire?

3 MR. BIRD: I do not have any information on that right now,
4 I'm sorry.

5 I would also like to move on to dependent claim 5. So
6 dependent claim 5, with respect to that, the examiner again states that the
7 recitations are met by a fair reading of Farnsworth as a whole. However,
8 this is a very conclusory statement. And again, the examiner has provided
9 no reason for this modification of Farnsworth.

10 Essentially claim 5 talks about the distance between the cord at
11 the end of the middle layer and it should not be too close to the cord of the
12 upper layer, which is described as reducing shearing between the uppermost
13 layer and the middle layer in our specification. And the examiner has just
14 made a conclusory statement that overall you would want to have this
15 relationship with the cords.

16 Moving to claim 24, which is the one that does not include the
17 requirement regarding the middle layer being of the same or narrower width
18 than the uppermost layer, claim 24 is more restrictive than claim 1 with
19 respect to the inclination angle of the outermost cord. However, Farnsworth
20 does not disclose an angle that's within this range.

21 JUDGE WARREN: I think it discloses what you make of page
22 1, lines --

23 MR. BIRD: 62 through 64.

24 JUDGE WARREN: I guess it starts at 57 and goes through 64,
25 part of which says the cords that sit third ply have an angle of 40 to 70,
26 preferably 40 to 50.

1 MR. BIRD: That's true. I will explain why. The 40 to 70
2 degrees, Farnsworth does not indicate in this section which direction the
3 cords will extend. However -- so it just says that the angle is 40 to 70
4 degrees, but it doesn't say how it relates to the middle cord layer.

5 Our claim requires cords of an outermost cord layer have an
6 inclination layer of not less than 45 degrees and less than 90 degrees with
7 respect to the equatorial plane as measured in the same direction as the cords
8 of the middle cord layer.

9 So we require it to be measured in the same direction as the
10 cords of the middle cord layer. So if you look further down in Farnsworth at
11 page 2, lines 38 through 40, with respect to the embodiment where the cords
12 of the ply 2 are biased at 45 degrees, they say they are biased in an opposite
13 sense from the cords of ply 2.

14 So accordingly, an opposite sense would be 45 degrees. The
15 opposite sense is 180 minus 45 or 135. Forty to 70 is a range of 110 to 140
16 degrees if you were going to do it in the same direction as the cords at the
17 middle layer.

18 JUDGE WARREN: Where are you citing to again?

19 MR. BIRD: It is on page 2, lines 38 through 40 of Farnsworth.
20 So if the paragraph begins on line 31, as shown more clearly in figure 2 the
21 breaker ply consists of parallel steel cords at a biased angle. So ply 2
22 consists of parallel steel cords at a biased angle of 45 degrees to the mid-
23 circumferential plane of the tire.

24 Breaker plies 3 and 4 consist of similar parallel steel cords and
25 have an equal and opposite bias angles of 18 degrees to the mid-

1 circumferential plane of the tire, the ply 3, being biased in an opposite sense
2 from the ply 2.

3 JUDGE WARREN: All that means is that the angle goes in a
4 different direction. I don't see where your claims require a particular angle
5 with respect to the equatorial plane. If you look at your figures 6 and 8 --

6 MR. BIRD: Figures 6 and 8 of our embodiments?

7 JUDGE WARREN: That's correct.

8 MR. BIRD: But our independent claim 24 --

9 JUDGE WARREN: All you are talking about is an angle of
10 inclination. You don't say in which direction it extends.

11 MR. BIRD: But the angle of inclination would extend -- if you
12 measure it from the equatorial plane 45 degrees, 45 to 90 degrees, that is
13 where it would extend.

14 JUDGE WARREN: Well, it could go to the opposite sense
15 from what you show in your figures 6 and 8 too. In other words, the cords
16 can run in the other direction.

17 MR. BIRD: In claim 1 they can. But in claim 24 they are only
18 restricted to 45 to 90 degrees. With respect to the equatorial plane, it says as
19 measured in the same direction as the cords of the middle cord layer.

20 So we specifically recite that this 45 to 90 degrees is measured
21 in the same way as the cords of the middle cord layer and the same direction.
22 So that's why claim 4 is a little broader than claim 1 in this respect.
23 However, claim 24 is narrower with respect to the arrangement of the widths
24 of the layers.

25 Is that clear or should I explain that in further detail?

26 JUDGE WARREN: That's fine. I have no question on it.

1 JUDGE PAK: That's fine.

2 MR. BIRD: I guess finally with respect to the outermost layer
3 extending over the outermost grooved edge, requirement that we have there
4 is -- the outermost cord layer has a width extending toward an end of the
5 tread portion over an outermost groove edge of an outermost circumferential
6 groove.

7 And then we have an outermost groove layer has to also be
8 narrower than the width of the innermost cord layer.

9 So in Farnsworth figure 1, we have one where that relationship
10 is -- well, Farnsworth does not disclose anything about the relationship
11 between the outermost cord layer and the groove edge. The examiner asserts
12 that the fact that Farnsworth's breaker assembly 2 through 4 is in a range of
13 90 to 110 percent of the axial width.

14 So referring to figure 1, assembly width B is 90 to 110 percent
15 of W. So the examiner is relying on that to show that it would cover -- the
16 outermost cord layer would extend beyond the groove edges. However, the
17 breaker assembly width B is not based on the outermost cord width. It's
18 only on the entire cord width.

19 And in addition, if you look at figures 3B and 3C, although the
20 outermost cord layer in there is larger and would be the widest of the layers,
21 in this case the outermost cord layer does not reach the requirement of being
22 narrower than the width of the innermost cord.

23 JUDGE WARREN: Can you point me to the page in your
24 brief, Counselor, where that argument is?

25 MR. BIRD: No, Your Honor.

1 JUDGE PAK: If you have no other argument, thank you for
2 coming.

3 MR. BIRD: Thank you for your time.

4 (Whereupon, the proceedings at 9:57 a.m. were concluded.)